

NOTES

PICEA ABIES (PINACEAE) NATURALIZED IN SOUTHEASTERN MINNESOTA—For three summers I have been observing two naturalized populations of Norway spruce, *Picea abies* (L.) Karst. (Pinaceae), in southeastern Minnesota. According to Little (1979), this species “has escaped from cultivation from Conn. to Mich. and perhaps elsewhere and may be naturalized locally.” The Minnesota plants are found in closely adjacent sites along secondary (gravel) roads in sections 11 and 12, T 102 N, R 8 W, near the South Fork Church, Preble Township, about 10 mi south of Rushford, Fillmore County. At each site there are large—up to about 0.8 m DBH—obviously planted trees of the species—some at an old homesite, some at an old cemetery—that without doubt served as the original source of seeds. On the north-facing wooded slopes and the roadsides contiguous to the homesite and cemetery are many Norway spruces of all sizes from seedlings a few centimeters tall to trees ca. 8 m tall. I counted at least 250 individuals clearly visible from a 0.4-km section of the road. Many of the larger trees—ca. 2.5 m and taller—produced cones each of the three years of observation. Seeds from cones collected from one of the trees in summer 1988 germinated freely after two months of stratification at 40 F.

The soil at the sites is a silty loam with scattered small pieces of limestone. Much of it is bare; it is in the bare spots that seedlings of the spruce are found. The moss *Bryum pseudotriquetrum* (Hedw.) Gaertn., Meyer, & Scherb. (determined by Jerry A. Snider, University of Cincinnati) is present in dense mounds to about 10 cm thick; I noted no spruce seedlings in this substratum. Associated vascular plants included *Betula papyrifera*, *Campanula rotundifolia*, *Cystopteris fragilis*, *Fragaria virginiana*, *Juniperus virginiana*, *Populus deltoides*, *P. tremuloides*, shrubby *Salix* spp., and *Ulmus rubra*. Voucher specimens (JWT 55237) collected on 24 Jun 1989 have been deposited in KNK and MINN.—*John W. Thieret, Department of Biological Sciences, Northern Kentucky University, Highland Heights, KY 41076, U.S.A.*

REFERENCES

- LITTLE, E.L., JR. 1979. Checklist of United States trees (native and naturalized). U.S.D.A. Forest Serv., Agric. Handb. 541.